Sun-Earth Day Special: Arctic Impressions
Barrow, Alaska: Transcript for Day 4

[Troy Cline]
"We shall not cease from Exploration. And the end of all our exploring will be to arrive where we started, and to know the place for the first time. (T.S. Eliot)

My name is Troy Cline and welcome to another special Sun-Earth Day podcast. In the last Arctic Impressions podcasts we took a trip to a high school in Barrow, Alaska, as described by visiting middle school teacher from Rockville, Maryland, Dorian Janney. On each day of Dorian's incredible journey she kept a journal of her experience complete with descriptive text and imagery that she emailed back to her students in Maryland at the end of each day. In today's podcast Dorian will read Day 4 of her journal describing her experience at the Polar Gateways Arctic Circle Sunrise conference that started on January 23rd, 2008. If that date sounds familiar to you, it's becaue it marked the day of the Polar Sunrise. Since Barrow is located over 300 miles north of the Arctic Circle, it doesn't see a sunrise for 84 days of the year! Imagine not seeing the Sun for 84 days! So when it does peak over the southern horizon on January 23rd… it's something to shout about.

We've also included interviews conducted by student reporter, Cara Mayo, of two scientists who participated in the Polar Gateways conference.

Don't forget to visit the Sun-Earth Day website for more information and the phenomenal imagery directly related to each of these podcasts.

So let's get started. Here's Dorian.

Day 4 in Barrow Alaska

[Dorian Janney]
Greetings from the Top of the World! Today is my fourth day in Barrow, Alaska, and the Polar Gateways Arctic Circle Sunrise conference officially began today. It is nice to go from being a teacher to being a learner, and I so enjoyed spending entire day learning about a myriad of different topics from so many experts.

This was a pretty special conference, as many of our speakers weren't even here. The entire conference is being broadcast live to many other sites, and we are able to see and hear presentations from other sites in real-time. We had many people in several different countries being connected to us, which was pretty amazing, especially given all the time differences between all of other people who were involved.

The first speaker was an Inupiat elder from the Barrow community named Kenneth Toovak. He did an invocation in the Inupiat language, which sounded

just amazing. My older sister lives in Denmark and speaks Danish, and the Inupiat language kind of reminded me of that language as some of the vowel sounds were kind of stretched out. Next we had a welcome from Richard Glenn, a board member of Barrow Arctic Science Consortium, (known as BASC). He gave us information about the town of Barrow and explained some of Barrow's cultural history to us. Next, George Olemaun, special assistant to the mayor here in Barrow, explained to us how the people of Barrow became involved with the researchers here at BASC, and described the history of this long and close relationship that these two communities now enjoy. For almost 5,000 years, the Inupiat people lived in their own communities and did not have interaction with other groups. When whaling was a big industry, back around 1850, the first white visitors became to come this way to catch whales. At first, there was not much interaction between these two groups. Eventually they began to work together, and a very special whaler, named Charles Brower, became a part of the community. He married an Inupiat woman and they had many, many children, and he brought some new ideas and techniques for whaling to the Barrow community. He was very interested in learning whatever they could teach him about their traditional manner of fishing and hunting. To this day, the Brower name is very common, and there is a section of town known as Browerville.

Our next speaker was Glenn Sheehan, who is the director of the BASC facility. He is married to the head of the anthropological laboratory here, and they have been here since 1988. He told us how important the people of Barrow were to the entire operation of Arctic Science here. He also showed us images and told us all about the first International Polar Year, which was held in 1881 through 1884.

Then we began to have our video conferencing with scientists from around the world. We began with Ingrid Sandahl of Kiruna, Sweden, who showed us images of her city and described the types of scientific research that is going on at the Swedish Institute of Space Physics. Many speakers from Sweden gave presentations, and we learned about the latest news from MARA, the Movable Atmospheric Radar in Antarctica, recent results from Mars and Venus studies, and about auroral studies that were made during the Russian-Swedish expedition to Spitsbergen between 1899 and 1900.

Let's listen to some of the scientists that our own Cara Mayo interviewed about auroral science.

[Begin Interview]
Cara: What is an aurora?
Kirsti Kauristie: Aurora is a visual display, a very beautiful one, which you can see around the magnetic poles. These areas are called auroral ovals.
Cara: Why doesn't it fill the sky green, and why does it have the structure?
Kirsti: The structure comes from the geomagnetic field lines. Those particles which cause the auroras, they run around the field lines. In the atmosphere there

is oxygen everywhere and the particles collide with the oxygen and run along the geomagnetic field lines. That is why you see the structures that show how the field lines are aligned. They are very discreet structures.
Cara: Are there auroras on other planets?
John: There are. There are Auroras on every planet that has a large magnetic field and a thick atmosphere. The auroras on other planets are very different from the auroras on the Earth. The auroras on the Earth, the colors are green and red. The reason or that is because the oxygen atmosphere that are glowing. The auroras on Jupiter are very very bright; they are the brightest in the solar system. They are about one hundred times brighter than they are on the Earth. The things that cause the auroras on Jupiter and Saturn are very different to the causes of the auroras on the earth. The auroras on the Earth are caused by the Sun's interaction with the Earth.
[End Interview]

Later we all met outside, in the freezing cold, to watch the first Arctic sunrise of 2008. It had stopped snowing and was actually pretty clear, and the beautiful red colors looked gorgeous against the white snow. Sure enough, at just a little after 1, the top of the sun was visible just at the horizon. We all cheered and yelled “Happy New Year”, even though it wasn’t really new year, but it just kind of felt right. Also, we weren’t really sure what you are supposed to yell when the sun finally comes up after so many months of not making it up over the horizon.

The afternoon was also filled with rich presentations on a variety of topics, and I just soaked it all up. Kenneth Toovak, the elder from Barrow, described his memories of the early arctic aviation at Barrow, and told us about what it was like when Wiley Post and Will Rogers plane went down back in 1935. They both unfortunately were killed and there is a memorial to them here in town. Roger Turner, from the University of Pennsylvania, talked to us from Penn., and he described more about early arctic aviation and the Bergen School of Meteorology. Next, we learned about the International Geophysical Year in 1957-1958 from people who were actually at the conference and from speakers in who were in Fairbanks, Alaska. One of the speakers, Robert Benson, had spent two years working at Antarctica, and it was just amazing to hear and see what his life was like for him and the 18 men who lived and worked together, back in 1957 and 1958. They were there to learn about the environment and conduct studies in that incredibly harsh environment.

We finished the first day of the conference off with a wonderful tour of the BASC Arctic Archeology Laboratory, where we got to actually touch and use magnifying glasses to explore many artifacts that have been escalated from various sites. We saw and held whale bones, walrus bones, art made by Inupiat using walrus ivory. We saw caribou skulls and objects preserved in peat such as old knives and tools that were used to scrape animal hides. It was truly an awesome experience.

[Troy Cline]
We would like to give a special thanks to:
-Dorian Janney for sharing her journal with us.
-Kirsti Karuistie from the Finnish Meteorological Institute in Helsinki, Finland for sharing her knowledge of the Aurora
-Jonathan D. Nichols from Boston University for sharing his knowledge of auroras on other planets.
-And of course our student reported, Cara Mayo.

Once again, don't forget to visit the Sun-Earth Day website for more information and the phenomenal imagery directly related to all four Arctic Impressions podasts.

We are very interested in hearing your questions and comments about the Sun-Earth Day podcasts. If you have something to say, send an email to sunearthdaypodcast@mail630.gsfc.nasa.gov .

For all other details about the Sun-Earth Day program including information about our past SED themes be sure to visit our website at sunearthday.nasa.gov.

While there, don’t forget to register in order to receive Sun-Earth Day updates!